

REMARKS

This Response is to the non-final Office Action dated May 6, 2008. A Petition for One Month Extension of Time is submitted herewith. Claims 1, 7, 9 and 18 have been amended, with claims 7 and 9 having been amended for purposes of proper dependence. No new matter was added by these amendments. Claims 3, 4 and 23 have been cancelled without prejudice or disclaimer. Please charge Deposit Account No. 02-1818 for the Petition for One Month Extension of Time and any other amount due.

In the Office Action, claims 1 to 17 and 23 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement; claims 1 to 17 and 23 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; claims 1 to 9, 16 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Application Publication No. 2003/0143352 A1 to Yang et al. ("*Yang*") in view of U.S. Patent No. 5,674,333 to Spencer ("*Spencer*") and U.S. Patent No. 6,596,122 to Savitski et al. ("*Savitski*"); claims 10 to 15 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yang*, *Spencer* and *Savitski* as applied to claims 1 to 9, 16 and 17 and further in view of U.S. Patent No. 4,832,773 to Shaposka et al. ("*Shaposka*"); claims 18 to 20, 22 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Savitski* in view of *Shaposka*; and claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Savitski* and *Shaposka* and further in view of U.S. Application Publication No. 2003/0226631 to Sterud et al. ("*Sterud*").

Regarding the rejection of claims 1 and 17 to 23 under 35 U.S.C. § 112, first paragraph, the claim language which was the subject of the rejection was been removed and thus the rejection is moot. However, by removing such claim language, Applicants make no admission as to the merits of the rejection.

Regarding the rejection of claims 1 to 17 and 23 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, Applicants respectfully submit that the rejection has been overcome in view of the addition of the step of *positioning a separate sheet of material*

between the axial surfaces at the ends of the tubing sections, the sheet being formed of a material which absorbs energy of an electromagnetic beam to independent claim 1.

Regarding the rejection of claims 1 to 9, 16 and 17 under 35 U.S.C. §103(a) as being unpatentable over *Yang* in view of *Spencer* and *Savitski*, Applicants respectfully submit that the rejection has been overcome in view of the following. Amended independent claim 1 is directed to a method of connecting together two sections of tubing comprising the steps of: placing the two tubing sections in opposed, end-to-end relation so that axially facing surfaces of the tube sections at the ends are free from exposure to the surrounding environment; maintaining interior passages of the two tubing sections so as to be free from exposure to the surrounding environment until and during welding; *positioning a separate sheet of material between the axial surfaces at the ends of the tubing sections, the sheet being formed of a material which absorbs energy of an electromagnetic beam*; and directing the electromagnetic beam generally toward the *sheet* for welding the two sections of tubing together. Support for this amendment is found at least at paragraphs [0040] and [0041] of the specification.

In this Response, certain features of now cancelled claim 4 have been incorporated into independent claim 1. Regarding what was claim 4, the Office Action stated: "Yang et al. discloses a sheet of material (film), which has a high concentration of dye to absorb energy of the laser," referencing paragraph [0072] of *Yang*, which states:

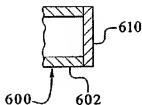
[i]n applications that use at least one "drum head" end, this type of end responds to the laser in a similar manner as that described above regarding the opening of a sealed end tube. One example of the "drum head" end is as follows. *The film of the "drum head"* may have a higher concentration of dye than the tubing material. Thus, the film heats faster than the tubing material. The film melts and flows outward to the perimeter of the tube and combines with the tube. The film material may be made from a variety of polymer materials such as polyolefins, polyamides, polyesters, styrene and hydrocarbon copolymers and particularly block copolymers of styrene and dienes and their hydrogenated derivatives, ethylene and vinyl acetate copolymers, ethylene and methacrylic acid copolymers and their ester derivatives. The film may be made from a blend of these materials and can be a monolayer or multiple layer structure. For example, polypropylene, polypropylene-Kraton blend, polypropylene polyethylene blend, or other compatible material. [Emphasis added]

Also consider paragraph [0132] and Fig. 12 of *Yang*, below:

FIG. 12 shows the tubing 600 with an end cap 610 hermetically sealed thereto. The end cap film 610 is a monolayer or multiple layer polymeric film that has a

tubing contacting surface 611 that is adhesively compatible with the tubing 600. The end cap film can be formed by any suitable polymer processing technique including extrusion, coextrusion, extrusion lamination, lamination, injection molding and the like. The end cap film 610, in a preferred form of the invention, is attached with sufficient strength to an end surface of tubing to withstand a burst strength of 30 psi. Burst strength is measured by applying pressurized air through a tubing flowpath 613 to pressurize the tubing until the tubing or end cap ruptures or leaks. The end cap 610 can be dimensioned to exceed the dimension of the end of the tubing and excess material is wrapped around the tubing end where it is attached to the tubing sidewalls 602 to form the drum embodiment referred to above. It is also possible to dimension the cap 610 as shown in FIG. 12 to match the dimension of the end of the tubing and be attached only to the end portion of the tubing without any significant amount of excess material.

FIG.12



Further, *Yang* teaches splitting a laser in two and directing each laser to a respective end of a tube. Specifically, paragraph [0068] of *Yang* states:

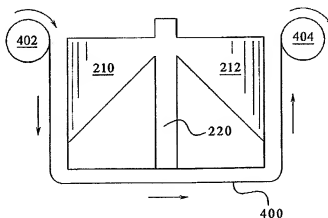
After each tube end 51 is loaded into its respective tube holder 70, 72, the laser unit 200 is activated and energy diverges from the laser source. The collimator 204 refocuses the diverging energy toward the prism lens 206. As the energy/light strikes the reflective prism 206 it reflects into two bundles of energy. In this embodiment, the prism lenses 210, 212 re-direct each bundle of energy at approximately a 90° angle to *focus the energy around the tube ends 51*. More particularly, a "spot" of energy *strikes the tube ends 51* and preferably, slightly exceeds the diameter B of the tube 50 *to ensure the tube is covered with adequate radiant energy*. [Emphasis added]

Yang clearly does not disclose a method including *positioning a separate sheet of material between the axial surfaces at the ends of the tubing sections, the sheet being formed of a material which absorbs the energy of the electromagnetic beam* and directing an electromagnetic beam generally toward *the sheet* for welding the two sections of tubing together, as in claim 1.

Yang discloses an end cap which is already hermetically sealed to the end of a tube and teaches a laser being directed directly at the end of a respective tube, not at a *separate sheet* positioned between the end of two tubes.

To preemptively alleviate any confusion, please note that the film illustrated in Fig. 6 of *Yang*, below, which does resemble a sheet, is a protective film 400 which covers convex lenses 210, 212, anvil 112 and light pipe 220. Protective film 400 does *not* absorb radiant energy and is not affiliated with welding of the tubes.

FIG. 6



For at least the above reasons, Applicants respectfully submit that claims 1 to 9, 16 and 17 are patentable over the combination of *Yang*, *Spencer* and *Savitski* and in condition for allowance.

Regarding the rejection of claims 10 to 15 and 23 under 35 U.S.C. §103(a) as being unpatentable over *Yang*, *Spencer*, *Savitski* and *Shaposka*, for the same reasons as above Applicants respectfully submit that claims 10 to 15 and 23 are patentable over the combination of *Yang*, *Spencer*, *Savitski* and *Shaposka* and in condition for allowance.

Regarding the rejection of claims 18 to 20, 22 and 24 under 35 U.S.C. §103(a) as being unpatentable over *Savitski* in view of *Shaposka*, amended claim 18 includes *covering an end of the tubing section with an energy absorption member, the energy absorption member formed of a material that absorbs energy from an electromagnetic beam*. The Office Action references lap joint piece 40 in *Savitski* as being an energy absorption member. However, referring to Fig. 1 of

Savitski, below, the lap joint piece 40 is not at the end of a tubing section and does not cover the end of a tubing section. Rather, the lap joint piece 40 sits on top of the junction of two pieces of pipe.

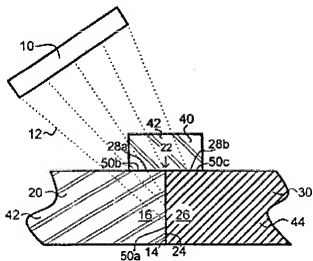


Fig. 1

Savitski even specifically states:

[i]n FIG. 3, the absorbing material is provided separately as 44 in interface 50b between end portion 16 and lap piece 40 and in interface 50c between end portion 26 and lap piece 40. **No absorbing material 44 is provided between butt joint ends 14 and 24.**

Savitski, column 9, lines 49 to 53. For at least these reasons, Applicants respectfully submit that claims 18 to 20, 22 and 24 are patentable over the combination of *Savitski* and *Shaposka* and in condition for allowance.

Regarding the rejection of claim 21 under 35 U.S.C. §103(a) as being unpatentable over *Savitski* and *Shaposka* and further in view of *Sterud*, for the same reasons as above, Applicants respectfully submit that claim 21 is patentable over the combination of *Savitski*, *Shaposka* and *Sterud* and in condition for allowance.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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